

August 4, 2006

UNIVERSAL WATER RESOURCE  
PRENTICE LEE FREEMAN SR.  
6487 W. DONGES LN  
BROWN DEER WI 53223

EIWA LAND ENVIRONMENT COMPANY LTD.  
RYOICHI OKAMOTO  
FUKUYAMA CITY

Re: Description: EXPERIMENTAL WATER REUSE SYSTEM  
Manufacturer: EIWA LAND ENVIRONMENT COMPANY LTD.  
Product Name: AQUAMAKE WASTEWATER RECYCLING SYSTEM  
Model Number(s): AM-T1, AM-T2, AM-T3, AM-T15, AM-T20, AM-T25, AM-T30, AM-T35, AM-T40, AM-T45  
AND AM-T50 ALL CONTINUOUSLY USING BIO-GUARD SODIUM HYPOCHLORITE (EPA  
EST. NO. 588-GA-1) WITHIN THE CHEMICAL TUBE LOCATED IN THE THIRD STAGE  
TREATMENT TANK  
Product File No: 20060012

The specifications and/or plans for this plumbing product have been reviewed and determined to be in compliance with chapters Comm 82 through 84, Wisconsin Administrative Code, and Chapters 145 and 160, Wisconsin Statutes.

The Department hereby issues an approval based on the Wisconsin Statutes and the Wisconsin Administrative Code. This approval is valid until the end of August 2011.

This approval is contingent upon compliance with the following stipulation(s):

- An acceptable means of hand washing must be provided at each installation site.  
  
If water is provided to aid in hand washing, then the water must be supplied from a NR 811 and/or NR 812 approved source.
- A plumbing plan must be submitted and approved prior to each proposed installation in accordance with Comm 82.20 (1) (a) 2. A Plumbing Plan Review must be successfully completed prior to each proposed installation. A minimum of four sets of completed plans and specifications, signed by a Wisconsin registered Architect, Designer, Engineer or licensed Master Plumber shall be submitted along with the following specific information:
  - a. A "Plumbing Plan Review Application" (i.e. SBD-6154) and required fee;
  - b. A scaled plot plan;
  - c. A scaled floor plan;
  - d. A drain, waste and vent system (i.e. DWV) isometric drawing for the engineered blackwater/graywater system;
  - e. A non-potable water system isometric drawing;
  - f. A potable water system isometric drawing;
  - g. A maintenance manual addressing all serviceable components or systems;
  - h. A written contingency plan; and
  - i. Water calculation worksheets:
    - 1. The complete non-potable water system; and
    - 2. The complete potable water system
  - j. A copy of this approval letter

For system installations that include irrigation and/or infiltration, the following information must also be provided:

- k. The soil type; and
- l. Infiltration rate

After the plan review process is complete, and the installation is finished, the State Plumbing Consultant assigned to the county in which the installation is located, shall inspect the completed installation. The final installation shall be completed and passed before the system is put into service.

Some of the information listed previously may not pertain to a specific installation.

- A copy of a deed attachment, and a copy of the cancelled check made out to the Register of Deeds in the county the proposed installation will be located, must be sent along with each Plumbing Plan. The deed attachment must contain the following minimum information:
  - 1. A written functional description of the system and it's anticipated effects;
  - 2. A written statement by the owner that specifically acknowledges that if the maintenance of the system is not performed on schedule, or quarterly reports are not received in time, the system will be ordered shut down and removed.

Plumbing Plans submitted without a deed attachment will not be reviewed.

- Monitoring of these systems shall be performed by licensed POWTS Maintainers, Master Plumbers or licensed professional Engineers. The maintenance of these systems may be performed by an unlicensed individual.
- Data collection and reporting shall occur on a monthly basis. The minimum data collected and reported shall consist of the following for each system:
  - a. The scum, sludge and water volumes in all holding, storage and treatment tanks within the system;
  - b. The volume of any make-up water added to, or wastewater subtracted from the system;
  - c. Any maintenance performed on the system, including regularly scheduled maintenance;
  - d. The following data shall be collected grab samples of water withdrawn directly from the water storage chamber within the system's third stage treatment tank:
    - 1. pH;
    - 2. Biological oxygen demand - 5 day (BOD5);
    - 3. Total suspended solids (TSS);
    - 4. Fecal coliform per 100 ml;
    - 5. Color; and
    - 6. Odor
    - 7. Free chlorine residual

All chemical/physical analyses must be performed in accordance with "Standard Methods For the Examination of Water and Wastewater", current edition.

This data must be officially reported to this department by a Wisconsin registered Architect, Engineer or licensed Master Plumber who's directly overseeing the installation and maintenance. The data must be collected and

submitted on a monthly basis, the filing fee for the monthly reports is \$25.00. Data submitted without the \$25.00 fee does not constitute a valid submittal and shall be returned. If the data requested for a given system is more than thirty days late, then the system will be shut down and ordered removed and the pertinent experimental system approval immediately rendered null and void.

- Any initial start-up water, or make-up water, added to these systems must be supplied from a NR 811 or NR 812 approved source.
- Any wastewater or waste materials (e.g. sludge, scum) withdrawn from these systems must be disposed of in accordance with NR 113.
- This experimental system approval is limited to a total of twenty-five sales and/or installations statewide.
- The influent wastewater to these systems is limited to human toilet/urinal and graywater wastes only.
- The final effluent from these systems may only be used for the following specific end uses:
  - a. Surface irrigation of landscaping (1, 2);
  - b. Vehicle washing (1);
  - c. Toilet and urinal flushing;
  - d. Air conditioning;
  - e. Once through cooling;
  - f. Subsurface dispersal/irrigation;
  - g. Soil compaction/dust control (1); and
  - h. Washing aggregate/making concrete (1);

Other urban uses with similar human access or exposure must be approved by this department, in writing, prior to these devices being sold or installed for any other purposes other than those listed in a-h above. Any, or all, of the aforementioned end uses may require a Wisconsin Pollutant Discharge Elimination System (WPDES) permit, contact the Wisconsin Department of Natural Resources WPDES permit program at (608) 267-7639 to determine what, if any, permitting may be required.

1 = in addition to acceptable disinfection with free chlorine, or equivalent alternative, systems installed for this end

use application must also provide an acceptable means of cyst/oocyst reduction.

2 = does not include food crops

- Bio-Guard, sodium hypochlorite, 3-inch diameter, non-expandable tabs, EPA Product Number 5185-144, EPA Establishment Number 585-GA-1, must be installed in the chemical tube, downstream of the activated carbon filter, within the third stage treatment tank, at all times.

The free chlorine concentration within the water storage chamber must be greater than, or equal to, 1.0 mg/l at all times.

- In addition to department approved plans, if the final effluent from these systems is discharged below the surface of a soil, then at least one of the following must be true:
  1. There must be a minimum of one foot of separation between the point of infiltration and groundwater; or
  2. The wastewater must contain 0 fecal coliform per 100 ml.

- This experimental approval in its entirety, or any of the twenty-five installation sites permitted under this experimental approval, can be terminated from further consideration at any time.
- These tanks must be designed to withstand the pressures to which they will be subjected.
- Installation and servicing of these systems must be performed in accordance with the manufacturer's written instructions and this approval letter. A copy of the manufacturer's installation and servicing instructions, and a copy of this approval letter, must be given to the owner of each system and kept on site.
- The manhole (entry) openings for these systems shall be a minimum of 23 inches in the least dimension. The inspection ports for these systems shall be a minimum of three inches in the least dimension.

Inspection ports and manhole openings for systems, located below ground, shall extend to a minimum of the finished grade. Inspection, servicing and maintenance openings for these systems shall terminate with a means that prevents entrance of deleterious materials.

Covers for these systems located at, or above, grade for openings larger than eight inches in the greatest dimension shall be provided with locking devices. These locking devices shall remain locked except for inspection, servicing or maintenance purposes.

- The maximum depth of bury for these systems is four feet.
- The backfill material for these systems shall be stone free.
- A permanent tag or label must be affixed to these experimental systems in a location that is visible after installation is complete. The tag or label must display the following minimum information:
  1. The complete name and mailing address of the manufacturer (i.e. Environmental Plumbing Solutions, Inc.);
  2. The telephone number of the manufacturer (i.e. Environmental Plumbing Solutions, Inc.);
  3. The model number of the experimental system

The department is in no way endorsing this product or any advertising, and is not responsible for any situation which may result from its use.

Sincerely,

Glen W. Schlueter  
Engineering Consultant-Plumbing Product Reviewer  
Bureau of Integrated Services  
Safety and Buildings Division  
Department of Commerce  
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